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Adjusted Simultaneous Importance Performance Analysis in E-government Implementation

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Abstract: The Importance Performance Analysis (IPA) method assists managers in making decisions, but service performance attributes from other institutions are often ignored. Furthermore, considering the competitor aspect, the analysis will be more comprehensive because it looks at internal and external factors. The IPA method was then improved by focusing on the competitor's side of the competitor's position to plan a management strategy, namely Simultaneous IPA (SIPA). The traditional SIPA does not discuss item weights between criteria, so the criteria for the most significant improvement often cannot be seen. Therefore, the adjusted SIPA calculates the weight of each indicator multiplied by performance and importance score to gain the perfect result. Based on the results, the adjusted SIPA model has been implemented on E-government problems in Indonesia. The importance of quadrant II requires local governments to improve the existing problems. Performance matrix items are neglected opportunities and competitive disadvantages. In the first quadrant, the importance and performance of both local governments are equally high, but it needs to maintain its performance in direct competition. The low priority quadrant III position has no opportunity and is full of false alarms. According to the experimental results, the item in the second quadrant is the part that the Meranti Islands Regency needs to improve mainly in the service domain, Q32-Q39, Q46, Q47, especially in the governance domain (Q13). These items are considerably harder than those of high importance but with low power. The gap analysis results show that the central government's rating score is lower than the self-assessment rate. This phenomenon indicates that expectations are higher than performance, and governments need to improve performance to match their value with profits. The gap analysis results between the two districts show that the gap between the two municipalities is negative overall and that the Meranti Island needs to improve all aspects of the E-government maturity assessment. A comparison of the SIPA and adjusted SIPA methods using the Wilcoxon method shows that there is an effect between changes in the two approaches, or in other words, the SIPA method was successfully improved using adjusted SIPA.

Keywords: Importance Performance Analysis (IPA), Gap Analysis, E-government, Electronic-Based Government System.

1. Introduction

The consideration of organizational governance [1], [2], [3] encourages managers to use an easy and practical approach. For decades, researchers and practitioners have used the Importance Performance Analysis (IPA) method to help manage their organizations. Many organizations use the IPA approach to gain importance, performance and identify their linkages with service or product indicators analysis [4], [5], [6], [7], [8]. Applying the IPA method developed from its original use as a marketing tool, then implemented in tourism, teaching, food service, virtual reality, health, money saving, human resources, data innovation, and E-government sectors [8], [9], [10], [11], [12], [13], [14].

IPA puts indicators of organizational success in quadrants and determines which indicators need improvement or maintenance. Thus, it will be easier for policymakers to choose prioritized indicators. The IPA method helps managers make decisions, but the performance attributes of other institutions are often not considered [15]. Competitor information will help decision-makers perform service improvement strategies, identify underserved opportunities, and define the right decisions [16]. Therefore, IPA was then developed into Simultaneous IPA (SIPA) to be able to assess competitors' aspects in determining strategies that need to be improved or maintained [17]. However, the traditional SIPA method has not been equipped with item

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weights between criteria, so the most significant measures for improvement often cannot be seen. In this study, we adjusted the traditional SIPA method to consider the weight of the criteria for each indicator. To test this method, we take a case study on e-government implementation in Indonesia. Our consideration for choosing this case study is because the implementation of E-government also needs to consider the factor of competition between local governments. Hopefully, by knowing its position, the local government can implement strategies to improve the quality of public services through an Electronic-Based Government System. Furthermore, in Indonesia, the implementation of quality E-government is an indicator of the success of reforms to create transparency, accountability, and standardize government processes. Therefore, governments need to develop an E-government master plan that takes into account aspects of the strengths and weaknesses [18]. The methodology in the development stage of the master plan is analyzing the maturity level of E-government based on the current state of E-government implementation, defining the expected E-government requirements, and conducting a gap analysis [13], [15], [19], [20]. Gap analysis is one of the tools to identify the differences that exist in the current organizational situation to achieve the desired situation [21]. Several conditions for applicating E-government in Indonesia, such as 1) the weight of indicators for the maturity level of E-government; 2) the gap between self-assessment (importance) with the central government assessment (performance), and 3) the gap between one local government to another became our background for adjusting the implementation of the E-government using the adjusted SIPA method. The adjusted SIPA calculates the weight of each indicator multiplied by performance and importance score to gain the perfect result to improve the traditional SIPA. This paper is as follows: Section 2 describes the background, Section 3 reviews the adjusted SIPA method. Then, Section 4 explains the case study, Section 5 explains the experimental result and discussion, and finally, the conclusions in Section 6.

2. Background

A. Importance Performance Analysis

In 1977, Martilla and James first introduced the Importance Performance Analysis (IPA) method to measure the relationship between consumer perceptions and service quality improvement priorities, also known as quadrant analysis [22]. The quadrant is used to map the relationship between interests and the performance of each attribute offered. IPA pays attention to the importance of participant attributes and a product or service's performance by dividing them into four quadrants. These quadrants are quadrant I (high importance and good performance), quadrant II (high importance and insufficient performance), quadrant III (low importance and insufficient performance), and quadrant IV (low importance, but good performance) [5], [23]. For further explanation it can be seen in Figure 1.

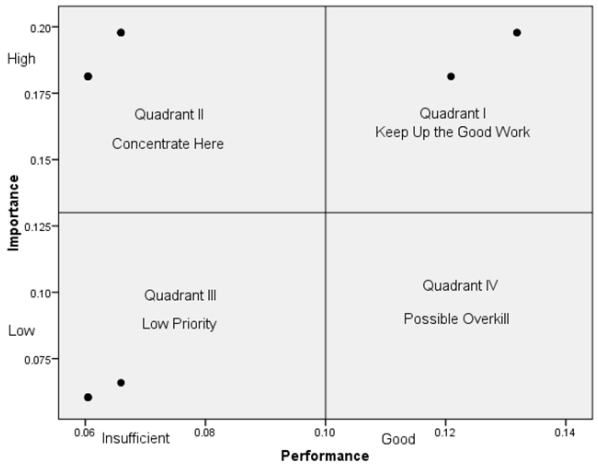

Figure 1. An Example of IPA Plot Matrix

This method has several advantages compared to other methods, including; 1) easy to identify service attributes that need to be improved or reduced to maintain consumer satisfaction, 2) relatively easy results interpreted, 3) low cost. The weakness of this method is that it needs to consider the service aspects of competitors so that the organization only sees the performance and expectations of internal parties.

B. Simultaneous Importance Performance Analysis

IPA's weaknesses inspired Burns (1986) to create a Simultaneous Importance Performance Analysis (SIPA) model [16]. There are three concepts in SIPA: interests, organizational performance, and competitor performance. Each indicator is in the high or low category. SIPA can also identify performance indicators as good or insufficient. In the traditional SIPA model, service interest attributes are measured by customer self-assessment. While performance is measured by the organization's success in carrying out the assessment indicators [15], [9]. The SIPA method does not consider the weight of the assessment indicators, so the advantages of this method must be improved so that managers can develop better organizational achievement strategies.

3. Research Method

This research comprises five steps of the adjusted SIPA method using implicit importance to indicate E-government maturity [14]. First, the result analysis of adjusted SIPA then focuses on the strengths and weaknesses of each local government. Then, the gap analysis was conducted based on local and central governments' importance and performance on each indicator score.

Step 1: Assign the weight $!_i$ of each E-government indicators by expert or government regulation, which i is the number of indicators.

Step 2: Gather data by questionnaires performance

($_{ij}$) and importance ($_{ij}$) indicator of item i in the local government j as ($_{ij}$) and ($_{ij}$) multiplied with $!_i$. Then, calculate the performance and importance as formula (1).

$$_{ij} = !_i \quad _{ij}; \; _{ij} = !_i \quad _{ij} \quad (1)$$

Step 3: Calculate the average importance and performance. So the SIPA coordinates are divided by formula (2), where K is the number of indicators, then we must set the verdict quadrant e-government attributes in each district.

$$^{-} = \sum_{i=1}^{k} \sum_{j=1}^{l} \quad _{ij}=K; \; ^{-} = \sum_{i=1}^{k} \sum_{j=1}^{l} \quad _{ij}=K \quad (2)$$

Step 4: Summarize and categorize the results according to the SIPA estimation table.

Step 5: Do a gap analysis to complement SIPA findings.

In adjusting SIPA, three factors need to be identified: 1) Importance, 2) The performance of local governments, 3) The performance of other local governments.

Table I shows the attributes of E-government maturity defined into different scenarios to see the opportunities and the competitive strategy. Based on Table I, the importance of the E-government maturity level is either high or low (column A). Columns B and C express the performance scenarios, and the importance of E-government implementation in each local government is shown in 8 terms, both poor and good. Finally, opportunities in the competition between the two local governments can be seen in column D.

An explanation regarding column D in Table 1 in the following paragraphs.

(1) **Neglected opportunity**: While this indicator of e-government is significant, neither municipalities nor their competitors deliver the satisfaction citizens expect. However, when local governments can implement effective planning and quality improvement, their service delivery can achieve and benefit from community satisfaction.

(2) **Competitive disadvantage**: While this service feature is significant, the municipality needs to catch up to its competitors and can be a considerable shortcoming needing improvement.

(3) **Competitive advantage**: The importance of this effective ownership is so high that municipalities have far outperformed their competitors, effectively separating districts from others within the showcase.

(4) **Head-to-head competition**: The significance of this benefit trait is high, and local government execution is rise to its competitor, meaning the local government ought to keep-up strategies.

(5) **Null opportunity**: Even though both the nearby government and competitors provide satisfactory benefit quality, it is not a zone that influences competition from the angle of citizens.

(6) **False alarm**: Although competitors perform superior to the local government, this does not influence citizen preference.

(7) **False advantage**: Even though the nearby government performs way better, the significance of the benefit trait is low. This situation infers that the neighborhood government may as well be putting much exertion or assets into this quality.

(8) **False competition**: Even though local governments and competitors have positive ratings from the public, this trait does not affect the gain of choice.

4. Case Study

We tested the adjusted SIPA method with a sample of two local governments in Indonesia: the Meranti Islands District (MR) and the Lima Puluh Kota District (LK). The two regencies on the island of Sumatra are similar in the area and population. The total population in Meranti Islands District is 206,116, while the Lima Puluh Kota District is 383,525. The Meranti Islands District is 3707.84 km2 [24], while the Lima Puluh Kota Kota District is 3354.30 km2 [25]. However, the Meranti Islands District is newly formed and is developing urban and regional planning. In this study, we used 47 questions assessed by local governments themselves (Importance) and assessed by the central government (Performance) in the January-December 2021 period.

5. Result and Discussion

Step 1: Define the weight. The first step is to take an inventory of the weight of each question stipulated in the Administrative and Bureaucratic Reform of the Republic of Indonesia Ministerial Regulation No. 59 of 2020 [26]. Result of weight identified by column weight on Table II and III.

Step 2: Collect the data. We have collected data from MR and LK districts on 47 indicators based on self-assessment as variable importance and performance appraisal by the Ministry of Administrative Reform and Bureaucratic Reform. Then, multiply the consequences with the importance and performance of each regional government of the MR and LK. After that, we summarize and categorize the result based on the SIPA estimation table. Table II shows the effect of adjusted SIPA implementation on MR and LK.

Based on equation (1), the calculation is complete if the weight of item Q1 ($!_1$) is 1.3. Therefore, the central government assessment for MR and LK as performance is 1 and 2, then the performance score $_{11}$ is 1.3Ö1=1.3 and $_{12}$ is 1.3Ö2=2.6. Table average of performance $^{-}$ calculated by equation (2).

Each local government is assessed themselves and labeled as Importance. For example, if the weight of item

TABLE I. SIPA EVALUATION GUIDANCE

A	B	C	D
High	Insufficient	Insufficient	Neglected Opportunity
		Good	Competitive Disadvantage
	Good	Insufficient	Competitive Advantage
		Good	Head-to-Head Competition
Low	Insufficient	Insufficient	Null Opportunity
		Good	False Alarm
	Good	Insufficient	False Advantage
		Good	False Competition

TABLE II. Result of Local Government Performance

Item	Weight	Performance		ij		Average
		MR	LK	MR	LK	
Q1	1.3	1	2	1.3	2.6	1.95
Q2	1.3	1	2	1.3	2.6	1.95
Q3	1.3	1	2	1.3	2.6	1.95
...						
Q47	3	2	3	6	9	6
	$\bar{}$			2.53	5.70	**4.11**

TABLE III. Result of Local Government Importance

Item	Weight	Importance		ij		Average
		MR	LK	MR	LK	
Q1	1.3	1	3	1.3	3.9	2.6
Q2	1.3	1	3	1.3	3.9	2.6
Q3	1.3	1	3	1.3	3.9	2.6
...						
Q47	3	3	4	9	12	10.5
	$\bar{}$			3.79	6.69	**5.24**

Q1 ($!_1$) is 1.3, and the local government assessment for MR and LK as Importance score $_{11}$ is 1 and 3, then the performance score $_{11}$ is 1.3Ö1=1.3 and $_{12}$ is 1.3Ö3=3.9 (Table III).

Step 3: Calculate the values of importance and performance. We calculate the values of an aggregate of significance and performance based on the data collected using equation (2), the results in Table II and III. It can be seen that $\bar{}$=4.11, and $\bar{}$=5.24.

Step 4: Summarize and categorize the results according to the SIPA estimation Table. Table IV illustrates the results according to the SIPA estimation table (Table I). If the score is less than the score, then the importance is low, and vice-versa. For example, the first row's column (b) average importance between MR and LK score is 2.6<5.24 (low). In the column (c) the performance of MR is inssufficient (1.3<4.11), otherwise the performance of LK in column (d) is also insufficient (2.6<4.11). Based on Table IV, the maturity level of E-government between MR and LK is equal (head-to-head competition) on six indicators; therefore, it needs to maintained the performance. The six indicators are Q16 (data center service), Q17(central area network services), Q19(central-regional coordinating team), Q40(organizational performance accountability services), Q44(legal documentation and information network services), and Q45 (public services area 1). Items in Q32-Q39, Q46, Q47 are items at a competitive disadvantage. Therefore, these items should be of concern to the local government of MR, where the score for obtaining the criteria for the maturity level of E-government is lower than the local government of LK. These items are Q32 (panning service), Q33 (budgeting service), Q34 (financial service), Q35 (goods and services procurent), Q36 (personnel service), Q37 (dynamic archive service), Q38 (property management services), Q39 (government internal oversight services), Q46 (public service area 2), Q47 (public service area 3). Item Q13 (budget and cost plan) is in a neglected opportunity condition, where the MR and LK assessments are both low. Still, the level of Importance is high, so both local governments must improve their performance. In the false alarm condition, the LK district has exceeded the MR district in items Q10-Q12, Q18, Q20, Q41-Q43. However, this situation does not affect people's preferences in implementing E-government. These items are Q10 (internal policy of central local government coordination team), Q11 (central-regional e-government architecture), Q12 (central-regional e-government plan map), Q18 (use of central-regional government liaison system), Q20 (application cooperation), Q41 (employee performance services), Q42 (public service complaints), Q43 (open data services).

The null opportunity condition are items Q1-Q9, Q14, Q15, Q21-Q31. The things are Q1 (central-regional e-government internal policy architecture), Q2 (central-regional e-government plan internal policy map), Q3 (internal data management policy), Q4 (internal policy of e-government application development), Q5 (Internal policy on data center services), Q6 (Internal policy on agency network services), Q7 (internal policy on the use of central-local government service liaison systems), Q8 (Internal policy on information security management), Q9 (internal ICT audit policy), Q14 (e-government Business Process Innovation), Q15 (development of e-government applica-

TABLE IV. The Result of Adjusted SIPA of MR and LK

Item (a)	Importance (b)	Performance MR (c)	Performance LK (d)	Opportunity MR vs. LK (e)
Q1	L (2.6)	I (1.3)	I (2.6)	Null Opp.
Q2	L (2.6)	I (1.3)	I (2.6)	Null Opp.
Q3	L (2.6)	I (1.3)	I (2.6)	Null Opp.
Q4	L (2.6)	I (1.3)	I (2.6)	Null Opp.
Q5	L (3.9)	I (1.3)	I (3.9)	Null Opp.
Q6	L (3.25)	I (1.3)	I (3.9)	Null Opp.
Q7	L (2.6)	I (1.3)	I (3.9)	Null Opp.
Q8	L (2.6)	I (1.3)	I (3.9)	Null Opp.
Q9	L (2.6)	I (1.3)	I (2.6)	Null Opp.
Q10	L (3.25)	I (3.9)	G (6.5)	False Alarm
Q11	L (5)	I (2.5)	G (5)	False Alarm
Q12	L (5)	I (2.5)	G (5)	False Alarm
Q13	H (6.25)	I (2.5)	I (2.5)	Neglected Opp.
Q14	L (5)	I (2.5)	I (2.5)	Null Opp.
Q15	L (5)	I (2.5)	I (2.5)	Null Opp.
Q16	H (6.25)	G (5)	G (5)	Head-to head
Q17	H (6.25)	G (5)	G (7.5)	Head-to head
Q18	L (5)	I (2.5)	G (5)	False Alarm
Q19	H (6.25)	G (5)	G (12.5)	Head-to head
Q20	L (5)	I (2.5)	G (5)	False Alarm
Q21	L (3)	I (1.5)	I (1.5)	Null Opp.
Q22	L (3)	I (1.5)	I (1.5)	Null Opp.
Q23	L (3)	I (1.5)	I (1.5)	Null Opp.
Q24	L (3)	I (1.5)	I (3)	Null Opp.
Q25	L (3)	I (1.5)	I (1.5)	Null Opp.
Q26	L (3)	I (1.5)	I (1.5)	Null Opp.
Q27	L (3)	I (1.5)	I (1.5)	Null Opp.
Q28	L (3)	I (1.5)	I (1.5)	Null Opp.
Q29	L (3)	I (1.5)	I (1.5)	Null Opp.
Q30	L (3)	I (1.5)	I (1.5)	Null Opp.
Q31	L (3)	I (1.5)	I (1.5)	Null Opp.
Q32	H (8.25)	I (2.75)	G (11)	Competitive Dis.
Q33	H (9.625)	I (2.75)	G (11)	Competitive Dis.
Q34	H (8.25)	I (2.75)	G (11)	Competitive Dis.
Q35	H (9.625)	I (2.75)	G (11)	Competitive Dis.
Q36	H (8.25)	I (2.75)	G (11)	Competitive Dis.
Q37	H (5.5)	I (2.75)	G (8.25)	Competitive Dis.
Q38	H (5.5)	I (2.75)	G (8.25)	Competitive Dis.
Q39	H (5.5)	I (2.75)	G (8.25)	Competitive Dis.
Q40	H (8.25)	G (5.5)	G (8.25)	Head-to head
Q41	H (5.5)	I (2.75)	G (8.25)	False Alarm
Q42	H (7.5)	I (3)	G (12)	False Alarm
Q43	H (9)	I (3)	G (12)	False Alarm
Q44	H (9)	G (6)	G (6)	Head-to head
Q45	H (9)	G (6)	G (15)	Head-to head
Q46	H (10.5)	I (3)	G (12)	Competitive Dis.
Q47	H (10.5)	I (3)	G (9)	Competitive Dis.

Description, H=High, L=Low, I=Insufficient, G=Good

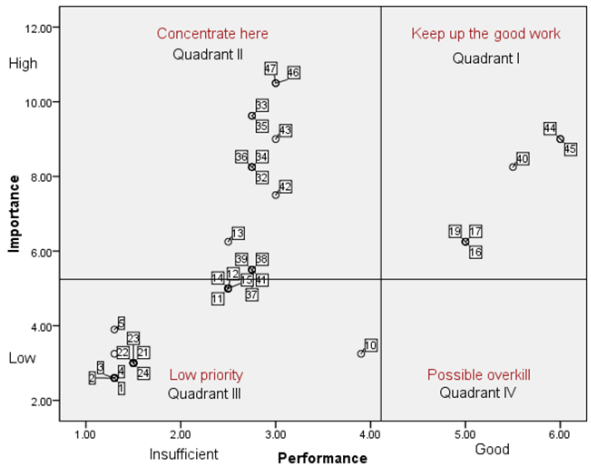

Figure 2. The result of Importance-Performance Matrix of MR District Government

tions), Q21 (implementation of e-government risk management), Q22 (implementation of information security management), Q23 (implementation of data management), Q24 (implementation of ICT asset management), Q25 (implementation of resource competency management), Q26 (implementation of knowledge management), Q27 (implementation of change management), Q28 (implementation of e-government service management), Q29 (e-government infrastructure), Q30 (application audit e-government implementation), Q31 (performance of e-government security audit). Under these conditions, null opportunity means that both local governments have low performance but at a low level of importance, so competition does not affect the public's view of government services.

For detailed analysis, figure 2 illustrates the Importance-Performance Matrix of MR district government using adjusted SIPA.

Figure 2 described that items in quadrant II, Q13, Q32-Q39, Q46, Q47 are in the priority area because the level of importance is high, but performance is insufficient. Therefore, MR district governments must concentrate fully on improving E-government performance to compete with other districts. In quadrants III and IV the indicators of low priority. While the indicators in quadrant I are need to be maintained by the local government.

Step 5: Gap analysis. The gap value calculates by the average performance minus the average expectation. Table V-VIII shows the gap value in this study.

Table V shows a positive gap value, namely in Q10. The description means that the performance value on the indicator Team Central/Local Government Agencies is better than the expected value. Whereas Q7 and Q8 show a gap value of 0, expectations follow reality. However, the other

TABLE V. The Gap in the System Policy Domain

No	Item	Avg. Performance	Avg. Importance	Gap
1	Q1	1.95	2.6	-0.65
2	Q2	1.95	2.6	-0.65
3	Q3	1.95	2.6	-0.65
4	Q4	1.95	2.6	-0.65
5	Q5	2.6	3.9	-1.3
6	Q6	2.6	3.25	-0.65
7	Q7	2.6	2.6	0
8	Q8	2.6	2.6	0
9	Q9	1.95	2.6	-0.65
10	Q10	5.2	3.25	1.95
Average		2.535	2.86	-0.325

TABLE VI. The Gap in the Governance Domain

No	Item	Avg. Performance	Avg. Importance	Gap
1	Q11	3.75	5	-1.25
2	Q12	3.75	5	-1.25
3	Q13	2.5	6.25	-3.75
4	Q14	2.5	5	-2.5
5	Q15	2.5	5	-2.5
6	Q16	5	6.25	-1.25
7	Q17	6.25	6.25	0
8	Q18	3.75	5	-1.25
9	Q19	8.75	6.25	2.5
10	Q20	3.75	5	-1.25
Average		4.25	5.5	-1.25

seven indicators have a negative gap value; this indicates that there needs to be an improvement in the performance results.

Table VI shows a positive gap value, namely in Q18. The description means that the performance value on the indicator Maturity Level of Use of the Service Liaison System for Central/Local Government Agencies has exceeded the expected value. Whereas Q17 shows a gap value of 0, expectations follow reality. However, the other eight indicators have a negative gap value; this indicates that there needs to be an improvement in the performance results.

All indicators in Table VII have negative gaps, with an average gap of -1.432. This result shows that management has lower performance in the management domain than its importance factor.

Table VIII shows a positive gap value, namely in Q45. The description means that the performance value on the Maturity Level of Sector Public Services 1 indicator has exceeded the expected value. Whereas Q37, Q38, Q39, Q41 and Q42 shows a gap value of 0, expectations follow reality.

TABLE VII. The Gap in the Management Domain

No	Item	Avg. Performance	Avg. Importance	Gap
1	Q21	1.5	3	-1.5
2	Q22	1.5	3	-1.5
3	Q23	1.5	3	-1.5
4	Q24	2.25	3	-0.75
5	Q25	1.5	3	-1.5
6	Q26	1.5	3	-1.5
7	Q27	1.5	3	-1.5
8	Q28	1.5	3	-1.5
9	Q29	1.5	3	-1.5
10	Q30	1.5	3	-1.5
11	Q31	1.5	3	-1.5
Average		1.568	3.000	-1.432

TABLE VIII. The Gap in the Service Domain

No	Item	Avg. Performance	Avg. Importance	Gap
1	Q32	6.875	8.25	-1.375
2	Q33	6.875	9.625	-2.75
3	Q34	6.875	8.25	-1.375
4	Q35	6.875	9.625	-2.75
5	Q36	6.875	8.25	-1.375
6	Q37	5.5	5.5	0
7	Q38	5.5	5.5	0
8	Q39	5.5	5.5	0
9	Q40	6.875	8.25	-1.375
10	Q41	5.5	5.5	0
11	Q42	7.5	7.5	0
12	Q43	7.5	9	-1.5
13	Q44	6	9	-3
14	Q45	10.5	9	1.5
15	Q46	7.5	10.5	-3
16	Q47	6	10.5	-4.5
Average		6.766	8.109	-1.344

However, the other ten indicators have a negative gap value; this indicates that there needs to be an improvement in the performance results.

Based on Table IX, average gaps are negative (–), with an average interval of -1,088. Therefore, from the results of these calculations, overall domains have not met the criteria for E-government maturity because the level of self-assessment (importance) is higher than the level of the central government's assessment (performance) of the

TABLE IX. The Average Gap Rate

Avg. Performance	Avg. Importance	Gap
3.780	4.867	-1.088

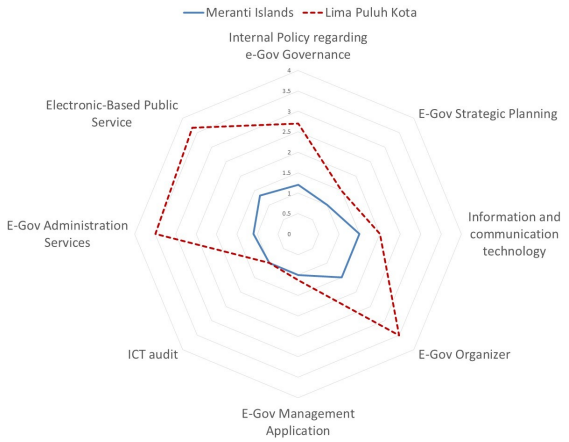

Figure 3. Performance of MR district vs. LK district

TABLE X. Shapiro-Wilk Normality Test

Variables	Statistic	df	Sig.
SIPA_Performance	0.880	47	0.000
SIPA_Importance	0.719	47	0.000
Adjusted SIPA_Performance	0.880	47	0.000
Adjusted SIPA_Importance	0.865	47	0.000

district government. Figure 3 describes the performance difference in E-government maturity between MR and LK in the radar graph.

Figure 3 illustrates that the Lima Puluh Kota districts have a better performance than the Meranti Islands district. This condition shows that the implementation of E-government in Lima Puluh Kota districts is of higher quality. However, the gap between the two local governments, all negative, illustrates that Meranti Island must improve all aspects of the E-gov maturity assessment. Therefore, a particular strategy is needed to make it happen, one of which is increasing the domain of Electronic-Based Public Service (the most significant gap is -2.4).

Testing the method

We compare the traditional SIPA method with adjusted SIPA to see if there are significant differences in the assessment in terms of performance and the importance of the indicators. First, we will test the normality of the data on each indicator using the Shapiro-Wilk approach.

Table X shows that all variables have a significance value of 0, meaning that the data is not in a normal distribution. Using a Wilcoxon hypothesis analysis, we propose the following hypothesis.

H_0: There is no average difference between SIPA and adjusted SIPA on importance and performance scores.

TABLE XI. Wilcoxon Output Ranks

	N	Mean Ranks	Sum of Ranks
Negative Ranks	$0^{a;d}$	0.00	0.00
Positive Ranks	$47^{b;e}$	24.00	1128.00
Ties	$0^{c;f}$		
Total	47		

[a:] *Adjusted SIPA Performance< SIPA Performance*
[b:] *Adjusted SIPA Performance > SIPA Performance*
[c:] *Adjusted SIPA Performance = SIPA Performance*
[d:] *Adjusted SIPA Importance < SIPA Importance*
[e:] *Adjusted SIPA Importance > SIPA Importance*
[f:] *Adjusted SIPA Importance = SIPA Importance*

TABLE XII. Wilcoxon Test Statistics

	Adjusted SIPA-SIPA Performance	Adjusted SIPA-SIPA Importance
Z	$5{:}979^a$	$5{:}983^a$
Asymp. Sig. (2-tailed)	.000	.000

a. Based on negative ranks.
b. Wilcoxon Signed Ranks Test

H_a: There is an average difference between SIPA and adjusted SIPA on importance and performance scores.

Table XI shows the output ranks and the explanation about the output as follows,

1. Negative ratings or differences (negative) between the value of importance and performance for SIPA and adjusted SIPA, namely $N=0^{a;d}$, indicates that no data has decreased from the SIPA value to the adjusted SIPA value.

2. Positive Ranks or difference (positive) between importance and performance values for SIPA and adjusted SIPA. There are $47^{b;e}$ positive data (N) that have increased in value from SIPA to adjusted SIPA.

3. The tie shows the adjusted SIPA and SIPA scores, so it can be said that there is no equal performance and importance score between SIPA and adjusted SIPA.

Based on the statistical output (Table XII), the Asymptote significance (2-tailed) value is 0, and it can be concluded that H_a is accepted. This conclusion means there is a difference between each indicator's SIPA and adjusted SIPA values.

6. Conclusion

Based on the research results, the customized Adjusted SIPA method has improved the traditional SIPA. Through experiments in two districts in Indonesia, the weight of each indicator can provide a better picture for the district head to determine the main priorities that need to be improved

first. For example, the Important-Performance Matrix in quadrant II, which requires local government to fix existing problems, is a neglected opportunity and a competitive disadvantage. In quadrant I, the level of Importance and performance of the two local governments is equally high, so they must maintain this performance in head-to-head competition. Quadrant III positions with low priority are filled with null opportunity and false alarm conditions.

The experiment results show what items in quadrant II need improvement from Meranti Island District, especially in the service domain, namely Q32-Q39, Q46, and Q47, and there is only one in the governance domain, namely Q13. These items carry significant weight compared to others with high-level Importance but low performance. The gap analysis results show that the score of the central government's assessment is lower than the self-assessment. This phenomenon indicates that expectations are higher than performance, so the government needs to improve its performance so that its value is equal to its interests.

In future research, we hope to test the adjusted SIPA method by combining other methods such as Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, Fuzzy Analytical Hierarchy Process (FAHP), or additional relevant analysis.

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